DEPARTMENT OF THE ARMY
US ARMY CHEMICAL MATERIALS AGENCY
TOOELE CHEMICAL AGENT DISPOSAL FACILITY
11620 STARK ROAD
STOCKTON, UTAH 84071

REPLY TO
ATTENTION OF:

HAND DELIVERED

MAR 2 6 2008

UTAH DIVISION OF
SOLID & HAZARDOUS WASTE
08.01167

March 24, 2008

Tooele Chemical Agent Disposal Facility

PM0123-08

SUBJECT: Temporary Authorization Request to Remove Selected Metal Parts Furnace (MPF) Discharge Airlock (DAL) Low-Temperature Monitoring (LTM) Triggers during the Processing of 155-mm Mustard (H) Projectiles

Mr. Dennis Downs, Director
Utah Department of Environmental Quality
Division of Solid and Hazardous Waste
288 North 1460 West
Salt Lake City, Utah 84116-0690

Dear Mr. Downs:

The TOCDF is requesting temporary authorization [as allowed by 40 CFR 270.42(e)] to implement selected changes described in the Class 2 Permit Modification Request TOCDF-MPFLTM-02-0998, entitled "Reduce MPF DAL LTM Trigger." This permit modification was submitted to the State of Utah Division of Solid and Hazardous Waste on 20 March 2008. The selected changes are requested for implementation only during the processing of 155-mm H Projectiles.

Description of Activities to be Conducted under the Temporary Authorization

The temporary authorization will allow the removal of some of the MPF DAL LTM triggers while processing 155-mm H Projectiles. The DAL LTM triggers requested for removal (or to not function) during 155-mm H Projectile processing are those associated with Primary Combustion Chamber (PCC) temperatures. The TOCDF Resource Conservation and Recovery Act (RCRA) Permit Condition V.C.2.r. requires DAL LTM if any value in the following table is exceeded. The LTM triggers requested for removal are identified by redline strikeouts.

Tag Number	Limit	Descriptions
14-TIT-152 or 14-TIT-391	≥ 1,528[1]*°F (Baseline TC) ~~≥ 1499°F (155mm H Projos)~~	Furnace Temperature (Zone 1)
14-TIT-141 or 14-TIT-392	≥ 1,464[1]*°F (Baseline TC) ~~≥ 1497°F (155mm H Projos)~~	Furnace Temperature (Zone 2)

Tag Number	Limit	Descriptions
14-TIT-153 or 14-TIT-393	≥ 1,561[1]*°F (Baseline TC) ~~≥ 1551*°F (155mm H Projos)~~	Furnace Temperature (Zone 3)
14-TIT-065 or 14-TIT-069	≤1800 °F	MPF Afterburner Temperature Low-Low
14-TIT-065 or 14-TIT-069	> 2175 ° F	MPF Afterburner Temperature High-High
14-PDIT-786	≥ 1.2 in. w.c.	Afterburner Exhaust Gas Velocity Pressure High
14-AIT-384m	≥ 1000 ppm 1-minute average. Correct to 7%-O_2, dry volume	Blower Exhaust CO Concentration. Average of 4 consecutive data points excluding points of calibration. Approximately 1-minute average.
24-AIT-669m	≥ 1000 ppm 1-minute average. Correct to 7% O_2, dry volume	Blower Exhaust CO Concentration. Average of 4 consecutive data points excluding points of calibration. 1- minute average.
14-AIT-082	≤ 3% O_2	Blower Exhaust O_2
14-AIT-082	≥ 15% O_2	Blower Exhaust O_2 60-second delay
24-AIT-670	≤ 3% O_2	Blower Exhaust O_2
24-AIT-670	≥ 15% O_2	Blower Exhaust O_2 60-second delay
PAS 703AH/BH	≥ 0.2 SEL for Mustard. Malfunctions not included.	PAS Blower Exhaust Agent Detected
PAS 707 AH/BH/CH	≥ 0.2 SEL. Malfunctions not included.	Common Stack Exhaust Agent Detected
14-TIT-010	≥ 2,385*°F	Primary Chamber Exhaust Temperature. Mustard Ton Containers
[1] To Be Determined during shakedown per an approved DAL monitoring plan.		

If this temporary authorization is approved, all other LTM triggers (i.e., those not identified by the redline strikeouts in the table above) will continue to cause a tray of treated 155-mm H Projectiles to remain within the DAL until agent monitoring of the projectile tray can be

conducted at temperatures less than 700 °F. However, the DAL LTM would not occur if the temperature measured by Temperature Indicating Transmitters (TITs) 14-TIT-152 or 14-TIT-391 exceeded 1,499 °F; 14-TIT-141 or 14-TIT-392 exceeded 1,497 °F; or if 14-TIT-153 or 14-TIT-393 exceeded 1,551 °F (i.e., those temperatures indicated in the redline strikeouts in the table above).

Need for Temporary Authorization

This temporary authorization is requested prevent disruptions in ongoing hazardous waste management activities. Additionally, recent demonstrations made through the MPF Mustard Agent Trial Burns (ATBs) cause the MPF PCC temperature related LTM triggers to be of no value from a compliance perspective, and to be an impediment to MPF process control and overall operation of the furnace.

The DAL LTM impacts MPF munitions processing rates because hold times in the DAL must be extended to allow treated wastes to cool to temperatures less than 700°F.

The RCRA Permit currently requires all munition trays within the MPF PCC to undergo LTM if any of the triggers are activated. Trays being held in the DAL awaiting the temperature to decrease to LTM conditions and trays being held in the MPF PCC awaiting the DAL to clear and that are also required to undergo LTM prevent the feeding of the next tray-full of prepared munitions to the MPF, thus disrupting MPF hazardous waste processing.

To prevent the MPF PCC LTM triggers from activating and the associated disruptions in hazardous waste operations, TOCDF uses the water-sprays located in Zones 1 and 2 of the PCC to keep zone temperatures below the values that trigger LTM. The avoidance of DAL LTM caused by exceeding the PCC temperature-related LTM triggers is accomplished by adjusting the amount of water flowing through the water sprays and the duration of water spray operation. Although it is possible to flow sufficient water through the water-sprays to avoid activating the PCC temperature LTM triggers, excessive use of the zone water sprays causes other process interruptions.

Water added to the MPF PCC to cool the exhaust gas also increases the volume and heat capacity of exhaust gas. The wetter PCC exhaust gas requires the Afterburner to add fuel gas and increase the flow of combustion air in order to maintain the Afterburner exhaust gas temperature above the control setpoint. The resulting increased flow of Afterburner exhaust gas causes the MPF Exhaust Gas Flow Rate Automatic Waste Feed Cut-Off (AWFCO) limit to be exceeded. Table 1 shows the ability of the MPF PCC zone water sprays to control the zone temperature to temperatures that are less than the LTM temperature triggers. It also shows the number of times the High Exhaust Gas Flow Rate AWFCO would be activated based on the projected MPF 155-mm H Projectile ATB-derived value for this OPL.

Table 1. MPF PCC Temperature LTM Trigger Control vs. Exhaust Gas Flow Rate AWFCO Occurrence

155mm Tray #	Heel	Date	ZONE 1		ZONE 2		ZONE 3		Exhaust Gas Flow Rate Hourly Average	
			14-Tit-152	14-Tit-391	14-Tit-141	14-Tit-392	14-Tit-153	14-Tit-393	max flow (kscfm)	avg flow (kscfm)
664	561.6	2/15	1453	1383	1382	1421	1484	1508	9.20	8.71
610	561.6	2/15	1419	1370	1386	1425	1480	1504	9.31	8.92
639	561.6	2/15	1436	1366	1394	1426	1482	1504	9.33	9.00
601	561.6	2/15	1433	1374	1390	1422	1484	1507	8.97	8.61
684	561.6	2/15	1424	1386	1396	1423	1481	1505	8.98	8.76
614	561.6	2/16	1443	1381	1398	1422	1485	1508	9.19	8.87
613	561.6	2/17	1485	1391	1390	1415	1484	1509	9.17	8.57
610	561.6	2/17	1452	1371	1385	1422	1491	1512	9.17	8.75
601	561.6	2/17	1472	1387	1393	1422	1481	1508	8.84	8.48
664	561.6	2/17	1456	1378	1382	1423	1479	1505	8.84	8.51
681	561.6	2/17	1464	1380	1396	1423	1483	1509	8.96	8.42
607	561.6	2/18	1437	1371	1402	1420	1478	1504	9.19	8.77
668	561.6	2/18	1442	1371	1391	1424	1479	1506	9.01	8.64
650	561.6	2/18	1457	1382	1387	1416	1477	1506	8.78	8.47
688	561.6	2/18	1433	1379	1386	1419	1485	1508	8.64	8.42
619	561.6	2/18	1422	1384	1399	1420	1482	1506	8.65	8.36
635	561.6	2/19	1469	1372	1379	1429	1480	1506	8.91	8.42
670	561.6	2/19	1440	1362	1394	1426	1484	1507	8.91	8.49
692	561.6	2/19	1439	1368	1386	1427	1481	1508	8.91	8.57
601	561.6	2/19	1472	1383	1378	1428	1482	1506	9.13	8.65
614	561.6	2/19	1471	1384	1380	1427	1482	1507	9.13	8.65
613	561.6	2/19	1454	1376	1377	1427	1480	1509	9.74	8.62
617	561.6	2/19	1487	1380	1378	1428	1483	1506	9.74	8.42
610	561.6	2/19	1491	1388	1389	1421	1481	1507		
		Average (°F) ⇒	1452	1378	1388	1423	1482	1507	**9.07**	
		LTM Setpoint ⇒	**1499**		**1497**		**1551**			
		Anticipated MPF 155mm H Projo ATB Derived Exhaust Gas Flow Rate AWFCO Limit (kscfm) ⇒							**8.96**	
		Indicates Occurrence of AWFCO at ATB Derived Limit ⇒								

Assurance of Continued Compliance with 40 CFR Part 264 Standards

Approval of this temporary authorization request will not compromise compliance with the 40 CFR Part 264 standards as specified in the TOCDF RCRA Permit because the continued use of MPF PCC temperature related LTM triggers while processing 155mm H projectiles serve no purpose in determining compliance with charge weight limitations.

The MPF PCC temperature LTM triggers were implemented to serve as indicators of overfeed conditions when there was a five percent heel weight limit imposed by the TOCDF RCRA Permit. The abnormal tray of munitions containing heel weights greater then five percent would cause a higher temperature spike than usual and thus be detected by the triggering of one or more of the four MPF PCC temperature related LTM triggers. In the past, exceeding the five percent heel weight limitation was a permit violation.

The HD TC and 155mm H Projectile ATBs demonstrated the ability of the MPF to comply with the Performance Standards specified in Module VI of the TOCDF RCRA Permit while processing agent heel weights greater than five percent. The results of these ATBs were used to remove the MPF five percent heel weight feed limitation from the permit.

The 155mm H Projectile ATB demonstrated the ability of the MPF to comply with the RCRA permit performance standards while feeding 155mm projectiles that were not drained before being fed to the furnace. During this test full trays (numbering 48 projectiles per tray) of projectiles full of mustard and solid heel (each with a nominal fill weight of 11.7 pounds per projectile) were fed to MPF. Because no attempt is made to drain the 155mm H Projectiles and it is impossible to place more than 48 projectiles on a tray, there is no possibility of a single charge of 155mm projectiles exceeding the charge weight limit; the ATB demonstrated 155mm charge weight is the maximum amount of agent that can be charged to the MPF while processing these projectiles and it cannot physically be increased.

In conclusion, the MPF PCC temperature LTM triggers are no longer of any value in determining an overfeed condition caused by a tray of munitions containing an excess heel. MPF 155mm H Projectile ATB results show that compliance with the TOCDF RCRA Permit performance standards are maintained while processing trays of 155mm H projectiles to which no more agent can be added. Therefore removal of the MPF PCC temperature related LTM triggers, as requested, does not impact compliance with the requirements of 40 CFR Part 264.

If you have any questions regarding this issue, please contact Ms. Elizabeth A. Lowes at (435) 833-7832 or Mr. Trace Salmon at (435) 833-7428.

Sincerely,

Gary W. McCloskey
EG&G Defense Materials, Inc.
*CERTIFICATION STATEMENT

Thaddeus A. Ryba, Jr.
TOCDF Site Project Manager
*CERTIFICATION STATEMENT

* I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.